IN THE CLAIMS:

Please AMEND the claims as indicated below:

1. (CURRENTLY AMENDED) An optical network comprising:

a plurality of optical network units; and

an optical source connected and arranged to transmit light signals to each of said plurality of optical network units;

wherein said optical source is capable of transmitting light signals at one or more of a plurality of different wavelengths, each optical network unit is preconfigured to accept a predetermined subset of more than one of said wavelengths without receiving a control signal indicating a wavelength of a light signal transmitted by said optical source to be accepted by the optical network unit, and each wavelength of said plurality is accepted by a predetermined different subset of optical network units,

the optical network further comprising:

control circuitry operable to cause said optical source to transmit light signals at one or more selected such wavelengths corresponding to respective desired subsets of said optical network units and further operable to effect a requested bandwidth redistribution by changing said one or more wavelengths selected for transmission to one or more different wavelengths corresponding to one or more different desired subsets of optical network units, to thereby effect the requested bandwidth redistribution without sending control signals to, and receiving control signals by, the optical network units indicating wavelengths of light signals transmitted by said optical source to be accepted by the optical network units.

2. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 1, wherein said control circuitry is operable to cause said optical source to transmit light signals at two or more selected wavelengths corresponding to two or more desired subsets of said optical network units.

3. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 2, wherein said two or more desired subsets together include all of said optical network units.

4. (CANCELED)

5. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 1, wherein the optical source comprises a plurality of fixed wavelength lasers, each laser being operable to

transmit at one of said plurality of wavelengths.

6. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 1, wherein the optical source comprises one or more tunable lasers.

7. (ORIGINAL) An optical network as claimed in claim 6, wherein the number of tunable lasers is equal to the number of desired subsets of optical network units.

8. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 1, wherein at least one of the optical network units comprises a filter, which passes only those wavelengths that are to be accepted by that optical network unit, and a receiver, which responds to light energy which is passed by the filter.

9. (ORIGINAL) An optical network as claimed in claim 8, wherein said filter comprises a fixed filter.

10. (ORIGINAL) An optical network as claimed in claim 8, wherein said filter comprises a Fabry-Perot filter.

11. (ORIGINAL) An optical network as claimed in claim 8, wherein said filter comprises a tunable filter.

12. (ORIGINAL) An optical network as claimed in claim 8, wherein said filter comprises a wavelength division demultiplexer which splits the incoming signal into various wavelengths, and wherein only those wavelengths which are to be passed by the filter are connected to the receiver.

13. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 1, wherein, in the case of two or more desired subsets, a particular optical network unit is not included in more than one of the two or more desired subsets of said optical network units.

14. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 1, wherein the network is a passive optical network.

15. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 1, wherein signals transmitted from the optical source to an optical network unit are carried by optical fibers.

16. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 1 as applied to an optical ring architecture.

17. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 1, as applied to a bus architecture.

18. (PREVIOUSLY PRESENTED) An optical network as claimed in claim 1, wherein the optical source is located within one of the optical network units.

19. (CURRENTLY AMENDED) Control circuitry for use in an optical network, which network comprises a plurality of optical network units and an optical source connected and arranged to transmit light signals to each of said plurality of optical network units, said optical source being capable of transmitting light signals at one or more of a plurality of different wavelengths, each optical network unit being pre-configured to accept a predetermined subset of more than one of said wavelengths without receiving a control signal indicating a wavelength of a light signal transmitted by said optical source to be accepted by the optical network unit, and each wavelength of said plurality being accepted by a predetermined different subset of optical network units,

the control circuitry being operable to cause said optical source to transmit light signals at one or more selected such wavelengths corresponding to respective desired subsets of said optical network units and further being operable to effect a requested bandwidth redistribution by changing said one or more wavelengths selected for transmission to one or more different wavelengths corresponding to one or more different desired subsets of optical network units, to thereby effect the requested bandwidth redistribution without sending control signals to, and receiving control signals by, the optical network units indicating wavelengths of light signals transmitted by said optical source to be accepted by the optical network units.

20. (PREVIOUSLY PRESENTED) Control circuitry as claimed in claim 19 which is operable to cause said optical source to transmit light signals at two or more selected wavelengths corresponding to two or more desired subsets of said optical network units.

21. (PREVIOUSLY PRESENTED) Control circuitry as claimed in claim 20, wherein said two or more desired subsets together include all of said optical network units.

22. (PREVIOUSLY PRESENTED) Control circuitry as claimed in claim 19, wherein, in

the case of two or more desired subsets, a particular optical network unit is not included in more than one of the two or more desired subsets of said optical network units.

23. (CURRENTLY AMENDED) A dynamic bandwidth assignment method for an optical network comprising a plurality of optical network units and an optical source connected and arranged to transmit light signals to each of said plurality of optical network units, said optical source being capable of transmitting light signals at one or more of a plurality of different wavelengths, each optical network unit being pre-configured to accept a predetermined subset of more than one of said wavelengths without receiving a control signal indicating a wavelength of a light signal transmitted by said optical source to be accepted by the optical network unit, and each wavelength of said plurality being accepted by a predetermined different subset of optical network units, in which method:

light signals are transmitted by said optical source at one or more wavelengths, selected from said plurality of wavelengths, corresponding to one or more desired subsets of optical network units, and,

in response to a required bandwidth redistribution, said one or more wavelengths at which light signals are transmitted by said optical source are changed to one or more different wavelengths, selected from said plurality, which correspond to one or more different desired subsets of optical network units, to thereby effect the required bandwidth redistribution without sending control signals to, and receiving control signals by, the optical network units indicating wavelengths of light signals transmitted by said optical source to be accepted by the optical network units.

24. (PREVIOUSLY PRESENTED) A method as claimed in claim 23, wherein light signals are transmitted by said optical source at two or more wavelengths, selected from said plurality of wavelengths, corresponding to two or more desired subsets of optical network units.

25. (PREVIOUSLY PRESENTED) A method as claimed in claim 24, wherein said two or more desired subsets together include all of said plurality of optical network units.

26. (PREVIOUSLY PRESENTED) A method as claimed in claim 23, wherein, in the case of two or more desired subsets, a particular optical network unit is not included in more than one of the two or more desired subsets.

27. (CURRENTLY AMENDED) An optical network comprising:

a plurality of optical network units; and

optical source means connected and arranged to transmit light signals to each of said plurality of optical network units;

wherein said optical source means are capable of transmitting light signals at one or more of a plurality of different wavelengths, each optical network unit is pre-configured to accept a predetermined subset of more than one of said wavelengths without receiving a control signal indicating a wavelength of a light signal transmitted by said optical source means to be accepted by the optical network unit, and each wavelength of said plurality is accepted by a predetermined different subset of optical network units,

the optical network further comprising:

control means operable to cause said optical source means to transmit light signals at one or more selected such wavelengths corresponding to respective desired subsets of said optical network units and further operable to effect a requested bandwidth redistribution by changing said one or more wavelengths selected for transmission to one or more different wavelengths corresponding to one or more different desired subsets of optical network units, to thereby effect the requested bandwidth redistribution without sending control signals to, and receiving control signals by, the optical network units indicating wavelengths of light signals transmitted by said optical source means to be accepted by the optical network units.